

The Unexplained Death of Lake of Life Caused by a Toxin Produced by *Cyanobacteria*

Yixuan Wang*

Associate Professor, Department of Natural Sciences, Albany State University, USA

EDITORIAL

For more than 20 years, experts have been baffled by the mysterious deaths of eagles, mallards, and other lake life in the southeast United States. The nation's largest unexplained bald eagle die-off occurred in Arkansas lake in 1994–95. Eagles, coots, and other birds lost their motor coordination, struggled to fly or even walk, and suffered convulsions as a result. Vast tracts of abnormal microscopic holes, or vacuoles, were discovered in the brains of these animals. A research group has identified a toxin, termed AETX, that could be the reason after prolonged research into the characteristics of *Cyanobacteria* adhering themselves to an invasive water weed. It has an unusual chemical composition that necessitates bromine-rich building blocks. Those bromide building components, on the other hand, aren't always plentiful in southern lake water. That's where a particular water weed's story comes involved.

Lakes with die-offs grew extensive areas of invasive water plant *Hydrilla verticillata*, according to a study. And they began to investigate whether the plants and their accompanying *Cyanobacteria* were capable of destroying brains on occasion. They collected *Cyanobacteria*-glopped wild weeds from lakes, to find out what

chemical compounds the bacteria were producing. It was difficult to grow and took two years to cultivate enough *Cyanobacteria*. It was tested on chickens, which seemed unaffected by the *Cyanobacteria* and their brains were free of vacuoles. Researchers again collected wild weeds glopped with *Cyanobacteria* from lakes with confirmed vacuolar myelinopathy outbreaks. There was a previously unknown chemical with abundant bromide molecules lurking among the splotches that marked the bacterial colonies. Substances that killed test animals were produced by these colonies.

Bromine can infiltrate lakes from a variety of sources, both natural and man-made, including power plants. *Hydrilla*, accumulates high levels of bromine chemicals, according to researchers. The weedy *Hydrilla* stops blooming in late summer and begins to release bromine-rich molecules. The *Cyanobacteria* will have all of the materials they need to create their harmful toxin at this point. Now that the suspect has been identified, it's more important to eliminate the *Hydrilla* invaders that aid in toxin production. Waterbirds eat the *Hydrilla* and the bacteria that travel with it, ingesting a deadly dosage of toxin. Predators that feed on the water birds, such as eagles and owls, are poisoned as well. Other species, such as amphibians and snakes, are affected by the toxin in the lab.

Correspondence to: Yixuan Wang, Associate Professor, Department of Natural Sciences, Albany State University, USA, E-mail: Yixunwang@gmail.com

Received: April 10, 2021; **Accepted:** April 15, 2021; **Published:** April 20, 2021

Citation: Wang Y (2021) The Unexplained Death of Lake of Life Caused by a Toxin Produced by *Cyanobacteria*. Mod Chem Appl. 09:296.

Copyright: © 2021 Wang Y. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.